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WEST COAST SPECIES OF HINNITES

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The late W. H. Dall made the following remark about *Hinnites*:[1]

"In various geological horizons as well as in the existing fauna, certain species of *Pecten* assume a sessile habit, involving an irregular subsequent growth of the valves after attachment to other objects, as in *Hinnites*. These species have no necessary generic connection with one another except what they gain from their relations to the *Pectinidae* as a group, and must be regarded as purely sporadic adjustments of individual forms to a particular environment."

The sessile habit, therefore, is merely of specific, certainly not of more than sectional importance, and consequently *Hinnites* should be treated as a section of the subgenus *Chlamys*. Moreover the type of *Hinnites* is *H. cortezi* Defrance, an Italian fossil, and it is improbable that the sessile Pectens of Italy had any direct relation to those of the West Coast Tertiary. The local stock seems to have been derived from a normal West Coast *Pecten* in the early Tertiary, and there is little assurance that even the East Coast "*Hinnites*" *adamsii* Dall is of the same origin. For these reasons the name *Hinnites* is thought by the writer to be of questionable value; and as it is not here accorded generic or subgeneric rank, it is not included in the name of the following species.

[1] Tertiary Fauna of Florida, Transactions Wagner Free Institute of Science, Philadelphia, Vol. 3, p. 689, 1898.

Pecten (Chlamys) multirugosus, new species

Lima gigantea Gray, Annals of Philosophy, new series, Vol. 9, p. 139, 1825; Wood, Catalogue Supplement, pl. 2, fig. 7, inedited, 1825 or 1826 (*fide* Gray), not *Plagiostoma* (=*Lima*) *gigantea* Sowerby, Mineral Conchology of Great Britain, Vol. 1, p. 176, pl. 77, 1812.

Hinnita gigantea Gray, Annals of Philosophy, new series, Vol. 12, p. 103, 1826.

Hinnites giganteus Gray, Sowerby, Zoölogical Journal, Vol. 3, p. 70, 1827; etc.

Hinnita poulsoni Conrad, Journal of the Academy of Natural Sciences, Philadelphia, Vol. 7, p. 182, pl. 14, October, 1834, not *Pecten poulsoni* Morton, Synopsis of the Organic Remains of the Cretaceous Group of the United States, p. 59, pl. 19, fig. 2, Philadelphia, published early in 1834 (the preface dated January 1).

?Pecten comatus Valenciennes, Voyage of the Venus, pl. 18, fig. 2, Paris, 1846, not *Pecten comatus* Münster in Goldfuss, Petrifactae Germaniae, Ed. 1, Vol. 2, pt. 4, p. 50, pl. —, fig. —, 1834; Ed. 2, p. 47, pl. 91, fig. 5, 1862.

Pecten (Hinnites) giganteus Gray, Arnold, Professional Paper 47, U.S. Geological Survey, p. 93 in part, pl. 29, figs. 2, 2*a*, not fig. 1, 1906; etc.

Both *Lima gigantea* (Sowerby) and *Pecten poulsoni* Morton are well-known species. It is unfortunate that Gray originally referred his species to the genus *Lima* which contains an earlier described species of the same name. This fact has heretofore been overlooked. "The principle of the Rule of Homonyms is that any properly published identical name of later date is 'stillborn and cannot be brought to life'." "It is stillborn and cannot be brought to life even when the species is placed in another genus."[2]

Pecten multirugosus is virtually a new name for the common Pliocene to Recent West Coast species formerly known as *Pecten (Hinnites) giganteus* (Gray); but in order to avoid any questions about the location or identity of the original types, the species is described as new and a new type is cited. The type is a Recent specimen from San Diego and is now No. 5 in the type collection of the San Diego Society of Natural History. There are also two paratypes (Nos. 2978 and 2979) at the California Academy of Sciences, and another in the Oldroyd Collection at Stanford University.

[2] See Opinion 83 of the International Commission on Zoölogical Nomenclature, Smithsonian Miscellaneous Collections, Vol. 73, p. 10, 1925; or the summary of Opinion 83, Proceedings of the Biological Society of Washington, Vol. 39, p. 102, July 30, 1926.

The young of this species is a typical *Chlamys* up to the size of 20 or 30 mm. The left valve resembles closely the left valve of *Pecten hastatus* Sowerby, or the young of some specimens of *Pecten squamatus* Gmelin from Japan, being sculptured with small radiating ribs, every fourth or fifth raised above the others and covered with spines. It is about the shape of *P. squamatus* but is slightly more circular than *P. hastatus*. The right valve does not have the high paired ribs of *P. hastatus*, but has low ribs, flattened on top, nearly all the same size with only occasionally a slight accentuation of every third. As soon as the young *Chlamys* assumes a sessile position, the growth becomes very irregular, influenced considerably by the shape of the object to which it is attached, the ribs become coarser and spinose, and the shell thickens rapidly, oyster-like, especially the right (the lower) valve which may in the process develop a greatly elongated resilial pit.

Pecten (Chlamys) multirugosus var. **crassiplicatus**, new name

Hinnites crassa Conrad, Reports U.S. Pacific Railroad Explorations and Surveys, Vol. 7, pt. 2, p. 190, pl. 2, figs. 1, 2, 1857, description reprinted by Dall, Professional Paper 59, U.S. Geological Survey, p. 181, 1909; etc., not *Pecten crassus* A. Risso, Histoire naturelle des principales productions de l'Europe méridionale, Vol. 4, p. 300, November, 1826.

"*Pecten (Hinnites) giganteus* Gray," Arnold, Professional Paper 47, U.S. Geological Survey, pl. 29, fig. 1 only, 1906.

The type is No. 13336 of the United States National Museum. It is figured by both Conrad and Arnold.

The form described by Conrad from the Miocene has the raised ribs of the left valve more strongly accentuated, sometimes even in the pectinidial stage, than is normal for the later fossil and living specimens; and the intercalaries become accentuated later in the growth of the individual and are not so pronounced. The effect is that of about ten stronger, irregular ridges standing out above the three or four minor intercalaries, whereas in the Pliocene and living forms the first set of intercalaries is accentuated early, becoming nearly equal in size to the original, and giving the appearance of twenty or more less prominent irregular ridges standing out only slightly above the three or four minor intercalaries between each pair of them. Thus the variety *crassiplicatus* has a smaller number of more highly differentiated coarse rugose ridges. It also is apt to be smaller in size and to have a smaller amount of irregular growth.